IN THE SPECIFICATION:

Page 1, after the title, please add the following new paragraphs:

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a National Stage Application of International Patent Application No. PCT/PL2004/000102, with an international filing date of December 6, 2004, which is based on Polish Patent Application No. P-363945, filed December 8, 2003.

BACKGROUND OF THE INVENTION

1. Field of the Invention

Page 1, please amend the first paragraph as follows:

The object of the invention is a software method of emulation of the EEPROM memory in another non-volatile memory, for example the Flash type memory. This method is applicable in systems, where in order to decrease costs of devices, using a non-volatile EEPROM memory, the existing memory is used, for example the Flash type memory for emulation of the EEPROM memory. ~~The solution includes integration of the method with circuits of the device and memory management methods, for example monitoring of changes and management of data writing. An exemplary format of data writing in the emulated memory was also presented for the needs of the application.~~

Page 1, after line 10, please add the section description as follows:

2. Brief Description of the Background of the Invention Including Prior Art

Page 1, please amend the second paragraph and add a new paragraph as follows:

There is a hardware method of memory emulation in the integrated circuit itself, known from the European patent application number EP0991081. Its ~~disadvantage is that it is limited~~ disadvantages are: firstly, limiting the emulation memory to one circuit and type of memory, ~~and~~ secondly, a low ratio of ~~the~~ a size of emulated EEPROM memory to ~~the~~ a size of ~~the~~ Flash memory used for the same purpose (1:8) and thirdly, a small size of the emulated memory, up to 8KB. ~~The disclosed solution works with every currently applied the Flash memory circuit, and it can emulate any size of currently produced the EEPROM circuits, up to 64KB.~~

Another method is known from publication written by Yvon Bahout, "Combined Flash and EEPROM Integrated Circuit," *Elektronik Industrie*, vol. 28, No. 10, pp. 48, 50-51, Oct. 1997. The method presents a cost-effective hardware only solution of a combined Flash and EEPROM chip. Each memory type block operates independently of the other during data writing. This results in that concurrent operation mode is possible and thus the Flash memory can be read while the EEPROM memory is being written.

Page 2, after line 8, please add the section description and new paragraphs as follows:

SUMMARY OF THE INVENTION

1. Purposes of the Invention

It is an object of this invention to provide a method of emulation of EEPROM memory that is enable to work with every currently applied Flash memory circuit.

This and other objects and advantages of the present invention will become evident from the description which follows.

2. Brief Description of the Invention

Page 2, please delete the fourth and fifth paragraphs as follows:

~~In the described solution according to the invention, an exemplary format of data writing in the emulated memory is also presented.~~

~~The example of digital television decoder, described below, where the solution according to the invention is applied, should be treated as one of possible applications of the emulation method of the EEPROM memory according to the invention.~~

Page 3, please amend the first paragraph and third paragraphs as follows:

Each device, which requires a non-volatile memory of the first type, for example [[~~a~~]] the Flash type memory and the EEPROM type memory, can be designed in such a way that the method of emulation of the EEPROM memory in the storage of the first type, according to the invention, is used and thus both the costs of circuits and the quantity of the required space for digital circuits assembled on the printed circuit boards are decreased. This allows ~~for~~ designing universal devices, the key element of which is independence from configuration of the memory block, where a combination of the Flash and the EEPROM memory or a combination of the Flash and emulated EEPROM memory can ~~appear~~ <u>be applied</u>.

One of the problems, which are encountered with emulation of the EEPROM memory in the Flash type memory, is the fact that the Flash memory operates in a

different way. Data should be changed by whole sectors. They cannot be changed by bytes, like in case of the EEPROM memory, which forces the use of a driver, which, by making operation available according to typical ~~the~~ EEPROM memories, will operate on sectors of the Flash memory. In order to decrease the number of required write operations to the Flash memory another solution was applied. Because during a typical work of the EEPROM memory, data are updated frequently and in small quantities, for example with a single byte, during emulation of the EEPROM memory data are collected and saved after a certain time as a patch. Such time can be, for example, defined in seconds or as a number of changes made on the data stored in the operational memory. Additionally, the saved data can be compressed if that is favorable. One of the requirements for operation of the emulation of non-volatile EEPROM memory is to guarantee possession of a correct copy of data even if these are not the most up-to-date data.

Page 4, after line 18, please insert the new paragraph as follows

The novel features which are considered as characteristic for the invention are set forth in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

Page 4, please delete the last paragraph and add the section description and the new paragraph as follows:

~~The invention is illustrated in the example of embodiment in the drawing, in which fig. 1 shows an exemplary device in the form of a digital television decoder using the method according to the invention. Fig. 2 discloses the procedure of starting memory emulation system, fig. 3 – the procedure of saving data to the memory, fig. 4 – an exemplary format of the patch. Fig. 5 presents a sector of the Flash memory including the data of the emulated EEPROM memory and patches, fig. 6 pictures the format of the header of the patch, fig. 7 – the procedure of saving update data, while in turn fig. 8 shows the procedure of preparing data for updating with a possibility of canceling the previously saved patch, and fig. 9 – the procedure of selecting the current non-volatile memory sector.~~

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings one of the possible embodiments of the present invention is shown, where:

Fig. 1 shows a digital television decoder with an EEPROM memory emulation block;

Fig. 2 shows a flow chart of a procedure of starting of memory emulation;

Fig. 3 shows a procedure of saving data to the memory;

Fig. 4 shows an exemplary format of a patch;

Fig. 5 shows a sector of a Flash memory containing data of an emulated EEPROM memory and patches;

Fig. 6 shows a format of a patch header;

Fig. 7 shows a flow chart of a procedure of saving update data;

Fig. 8 shows a flow chart of a procedure of preparing data for updating of the patch; and

Fig. 9 shows a flow chart of a procedure of selecting a current non-volatile memory sector.

DESCRIPTION OF INVENTION AND PREFERRED EMBODIMENT

Page 8, after line 25, please insert the new paragraph as follows

The preferred embodiments having been thus described, it will now be evident to those skilled in the art that further variation thereto may be contemplated. Such variations are not to be regarded as a departure from the invention, the true scope of the invention being set forth in the claims appended hereto.